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## Validating the Persian Adolescent Sleep Hygiene Scale-Revised (ASHSr) using comprehensive psychometric testing methods

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### SLEEP MEDICINE

Volume: 50 Pages: 63-71

DOI: 10.1016/j.sleep.2018.05.036

Published: OCT 2018

Document Type: Article

[View Journal Impact](#)

### Abstract

Background: This study translated the Adolescent Sleep Hygiene Scale-revised (ASHSr) into Persian and aimed to validate its psychometric properties using classical test theory and Rasch analyses.

Methods: Adolescents aged 14-18 (n = 389; 199 males) and their parents in Iran participated in the study. Each adolescent wore a wrist actigraphy device during sleep time and completed the ASHSr, the Depression Anxiety Stress Scale (DASS), the General Health Questionnaire (GHQ), the Pediatric Daytime Sleepiness Scale (PDSS), and the Pittsburgh Sleep Quality Index (PSQI). A parent of each adolescent completed the Sleep Disturbance Scale for Children (SDSC).

Results: The construct validity of the ASHSr was supported by both classical test theory (factor loadings from confirmatory factor analysis [CFA] = 0.64 to 0.88; corrected item-total correlations = 0.70 to 0.92; test-retest reliability = 0.72 to 0.90) and Rasch analyses (infit mean square = 0.73 to 1.30; outfit mean square = 0.74 to 1.32). ASHSr had significantly negative associations with DASS subscales (beta = -0.15 to -0.42, ps < 0.001) and GHQ (beta = -0.663, p < 0.001). Known-group validity was demonstrated by the significant differences between poor and good sleep hygiene based on ASHSr in the actigraphy measure and scores of PDSS, PSQI, and SDSC. The multigroup CFA and differential item functioning in Rasch analyses suggested that all the participants interpreted the ASHSr similarly, regardless of their gender or living in a private room.

Conclusions: The Persian ASHSr demonstrated good reliability and validity in assessing sleep hygiene among Iranian adolescents. Healthcare providers may use it to assess the effectiveness of sleep hygiene programs. (C) 2018 Elsevier B.V. All rights reserved.

### Keywords

**Author Keywords:** Adolescent; Actigraphy; Classical test theory; Rasch; Sleep hygiene

**KeyWords Plus:** SELF-REPORTED SLEEP; RASCH ANALYSIS; WHOQOL-BREF; CHILDREN; QUALITY; ACTIGRAPHY; VALIDITY; INSTRUMENT; PORTUGUESE; DURATION

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#### Publisher

ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS

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